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A RESEARCH PROJECT TO DETERMINE CURRICULA FOR TEACHER EDUCATION AND CORRELATION OF NATIONAL TEACHER EXAMINATION SCORES AND GRADE POINT AVERAGES.

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THE GENERAL DESIGN OF THIS STUDY WAS TO (1) SELECT A REPRESENTATIVE SAMPLE OF ALL 1962 AND 1963 BACHELOR'S DEGREE GRADUATES FROM NORTH CAROLINA INSTITUTIONS WHO QUALIFIED FOR THE CLASS A TEACHER'S CERTIFICATE, (2) TO ANALYZE THEIR COLLEGIATE TRANSCRIPTS BY COURSE AREAS, AND (3) TO CORPELATE THEIR SCORES ATTAINED ON THE COMMON EXAMINATION OF THE NATIONAL TEACHER EXAMINATION WITH THEIR OVERALL ACADEMIC GRADE-POINT AVERAGES. THE SAMPLE WAS 2,274 PERSONS SELECTED RANDOMLY FROM APPROXIMATELY 9,000 PERSONS QUALIFIED FOR THE CLASS A TEACHER'S CERTIFICATE. RESULTS OF THE STUDY REINFORCED THE CONCEPT THAT PROSPECTIVE TEACHERS' CURRICULUMS DIFFER GREATLY ACCORDING TO THE LEVEL OR AREA FOR WHICH CERTIFICATED. PROSPECTIVE SECONDARY SCHOOL TEACHERS TEND TO TAKE MORE WORK IN THEIR AREA OF SPECIALIZATION THAN IS REQUIRED BY THE STATE OF NORTH CAROLINA. THE DERIVED COEFFICIENT OF CORRELATION OF .635 REPRESENTS A HIGH RELATIONSHIP BETWEEN THE GRADE-POINT AVERAGES AND SCORES ON THE COMMON EXAMINATION OF THE NATIONAL TEACHER EXAMINATION. (WB)

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Credit for the statistical designs and procedures accrues, in part, to the Computing Center of North Carolina State of the University of North Carolina at Raleigh.

Full responsibility for analysis, interpretation, and conduct of all phases of the project, however, rests upon the principal investigator.

Jerry A. Hall

BACKGROUND OF THE STUDY

A continuing study of curricula for teacher education is important in any long-range program of improvement.

Many studies have been conducted on teacher education curricula from various viewpoints. Most of these studies have been based on analyses of college catalogues and/or state requirements for teacher's certificates.

During the winter of 1962-63, considerable interest developed in the Division of Professional Services of the North Carolina State Department of Public Instruction in the question "What courses are prospective teachers actually taking in their programs of studies?" It was known that specified amounts and kinds of work in professional education and in subject matter areas were necessary to secure a class "A" certificate, but little was known of courses taken as electives and in the general education program. The Division's only guide in this inquiry was A Profile of Teacher Training, discussed in the related literature section of this report.

At about the same time, further interest developed in the National Teacher Examination and its relationships to college testing and grading.

In line with these interests, a proposal for financial support was prepared and submitted to the Cooperative Research Program of the United States Office of Education. After acceptance of the proposal, the project was implemented.

INTRODUCTION

The study and this resultant report were developed around two objectives: The first objective was to determine the quantitative content of collegiate study programs of a representative sample of 1962 and 1963 bachelor's degree graduates of colleges and universities in North Carolina. This objective could only be met by analyzing the transcripts of completed work presented by these prospective teachers.

The second objective was to determine the statistical correlation of scores individuals attained on the Common Examination of the National Teacher Examination and their over-all academic grade point averages.

In general, the study was undertaken to provide information on the following questions:

1. What was the basic curricular pattern of North Carolina teacher education graduates in 1962 and 1963?
2. How did curricular patterns for teacher education students differ according to the level or area for which they were prepared to teach?
3. Is there a positive statistical correlation between collegiate grades and scores attained on the Common Examination of the National Teacher Examination, and, if so, to what degree is the relationship positive?

PLAN OF THE STUDY

General Design. The general design of this study was to select a representative sample of all 1962 and 1963 bachelor's degree graduates from in-State institutions who qualified for the North Carolina class "A" teacher's certificate, to analyze their collegiate transcripts by course areas, to correlate their scores attained on the Common Examination of the National Teacher Examination with their over-all academic grade point averages, and to prepare interim and final reports.

Selection of the Sample. Approximately 9,000 persons qualified to receive North Carolina class "A" teacher's certificates after graduation from colleges or universities in North Carolina during 1962 and 1963. Twelve of these institutions were publicly supported and 23 were privately supported. The study was designed to select a 25 percent random sample by selecting, from a table of random numbers, a beginning number among the first 10 persons meeting the criteria and selecting each fourth person thereafter, if such person met the criteria, until the population was consumed. After the population was consumed as noted, records were

checked to determine if all institutions were represented. This resulted in selection of 2,374 persons representing all in-State institutions. National Teacher Examination scores were available for 2,310 of these persons.

Determination of Areas of Courses. As part of the preparation for the study, a copy of the most recently available official catalogue of each in-State institution of higher education was secured, and an intensive examination of all courses offered was conducted by the principal investigator. As a result of this examination, 31 classifications of courses were determined. Representative titles in each area classification are as follows:

History and Philosophy of Education (school-oriented courses)--Classroom Organization and Control, Comparative Education, History of Education, Introduction to Education, Principles and Practices of Education, The School, The School Curriculum, Sociology of Education

Educational Psychological Foundations (pupil-oriented courses)--Adolescent Psychology, Child Psychology, Educational Psychology, Human Growth and Development, The Pupil

Methods--Methods of Teaching, Teaching in the Elementary School, Teaching of Reading, Teaching of (Subject) in High School

Audiovisual--Audiovisual Education, Educational Television and Moviemaking, Preparation of Audiovisual Materials, Visual Aids in Education

Practicum--Student Teaching, Directed Teaching, Internship

Art--Art Appreciation, Art for Elementary Teachers, Art in the School, Arts and Crafts, Ceramics, Drawing, History of Art, Problems in Design

Commerce--Business Law, Business Mathematics, Elementary Accounting, Office Management, Office Practice, Personnel Management, Principles of Marketing, Retailing, Shorthand, Typing

Grammar--Advanced Grammar, College Grammar, Freshman English, Grammar and Composition (Half of the s.h. credits in the last two courses was counted in these classifications, the other half in Composition.)

Literature--The American Novel, Chaucer, Eighteenth-Century Literature, English Literature, Literature for Children, Milton, Recent American Literature, Shakespeare's Comedies

Composition--Freshman English, Grammar and Composition (see note above), Composition and Rhetoric, Creative Writing, Journalism

Speech--Advanced Public Speaking, Drama Presentation, Fundamentals of Speech, Voice and Diction

French--Civilization, Conversation, Culture, Elementary, History, Intermediate, Literature

German--Civilization, Conversation, Culture, Elementary, History, Intermediate, Literature

Spanish--Civilization, Conversation, Culture, Elementary, History, Intermediate, Literature

Other Language--Greek, Hebrew, Italian, Japanese, Latin, Russian

Vocational--Agriculture, Engineering, Home Economics, Industrial Arts, Nursing

Health and Physical Education--First Aid, Freshman Physical Education, Health and Physical Education for Teachers, Human Anatomy and Physiology, Kinesiology, Organization and Administration of Physical Education, Principles of Health and Physical Education, Sophomore Physical Education, Tests and Measurements in Physical Education

Mathematics--Analytic Geometry, Calculus, College Algebra, Differential Equations, Plane Trigonometry, Probability, Statistics

Music--Applied Music (Piano, Voice, Strings, etc.), Counterpoint, Ear Training, Form and Analysis, Harmony, History of Music, Orchestra and Choral Conducting, Public School Music

Philosophy--Ancient Philosophy, Ethics, Logic, Modern Philosophy, Philosophy of Religion

Psychology--Abnormal Psychology, Applied Psychology, General Psychology, Problems in Psychology, Social Psychology

Biology--Anatomy and Physiology, Bacteriology, Botany, Comparative Vertebrate Anatomy, Embryology, General Biology, Genetics, Histology, Zoology

Chemistry--Advanced Analytical Chemistry, Biochemistry, General Chemistry, Organic Chemistry, Physical Chemistry, Qualitative Organic Analysis, Volumetric Quantitative Analysis

Physics--Biophysics, Descriptive Astronomy, General Physical Science, General Physics, Heat, Modern Physics

Other Sciences--Elementary School Science, Foundations of Modern Physical Science, Geology, Photography, Science in the Elementary School

Economics--Current Economics, Money and Banking, Personal Finance, Principles of Economics, Principles of Insurance, Public Finance and Taxation

Geography--Conservation of Natural Resources, Economic Geography, Physical Geography, Principles of Geography, Regional Geography

History--Current History, History of England, History of Modern Russia, History of the United States (all phases), North Carolina History, Renaissance and Reformation, World Civilizations

Sociology--Criminology, General Sociology, History of Social Thought, Marriage and Family Relations, Rural Sociology, Social Problems

Other Social Studies--Anthropology, Political Science

Other Courses--Library Science (all phases), Military Science, Religion and Bible

Determination of Areas of Certification. Codes suitable for use in electronic data processing equipment were devised according to areas of certification for which individuals were qualified. Areas included primary and grammar grade at the elementary school level; broad field secondary school areas of art, Bible, commerce, distributive education, English, foreign language (modern), health and physical education, health education, home economics, industrial arts, Latin, mathematics, music, science, and social studies; secondary school subarea fields of biology, chemistry, geography or geology, physics, general science, economics, government, history, sociology, basic business, bookkeeping, stenography, and typing; and special service areas of library science, special education, and vocational (agriculture or distributive education).

Each person selected had received class "A" certification in at least one of the above areas. A total of 480 were certificated in two or more areas. Due to limitations of space, those certificated in more than two areas were limited to two areas.

Determination of Grade Point Averages. In order to have all persons' grade point averages computed on the same basis, all quarter system courses were converted to a semester hour basis. Conversion was on the basis of three quarter hours to two semester hours. Since different institutions also give different values to grade points, all grade point averages were also computed by the project staff on the basis of three grade points for each semester hour earned with a grade of "A", two grade points for a grade of "B", and one grade point for a grade of "C". This means that a maximum over-all grade point average of 3.00 was possible and a "C" average would be a grade point average of 1.00.

This procedure provided a common basis for grade point averages and assured comparability of grades from different institutions.

SUMMARY OF TRANSCRIPTS

A total of 2,374 transcripts were analyzed during this study. Nine hundred and twenty persons were certificated in the elementary school areas of the primary grades and the grammar grades, and 1,654 were certificated in secondary school and special subject areas.

A total of 480 of the above were certificated in at least two fields or areas. This group included two persons certificated in elementary school areas with other certification, 427 persons certificated in at least two secondary school areas, and 51 persons certificated in a special subject area and some other area.

A small number of persons were certificated in more than two areas. However, only the first two areas of certification listed on their certificate were used.

The following table presents data on the number of persons certificated in each area, excluding the second area of those so certificated.

TABLE 1

SUMMARY OF AREAS OF CERTIFICATION

Over-all	2,374	Math	99
Primary Grades	428	Music	66
Grammar Grades	492	Science	78
Art	37	Social Studies	236
Bible	3	Library Science	13
Commerce	152	Special Education	5
English	286	Vocational	17
Foreign Language	69	Biology	52
Health and Physical Education	176	Chemistry	2
Home Economics	94	General Science	8
Industrial Arts	33	History	15
Latin	5	Sociology	2
Health Education	2	Basic Business	4

RATIONALE FOR USE OF NATIONAL TEACHER EXAMINATION SCORES

The National Teacher Examinations, as described in the Educational Testing Service's Handbook for School and College Officials, "provide a basis for assessing

academic preparation in both professional and general education" and "provide objective examinations of measurable intellectual competencies which are commonly considered basic to effective classroom teaching." The Common Examinations, a battery of five discrete tests, are "designed to measure certain knowledge and abilities expected of every teacher," and "to provide a general appraisal of a prospective teacher's basic professional preparation, general academic attainment, and certain mental abilities." It is plausible that collegiate courses and resultant academic grades involve somewhat similar competencies, although academic grades probably include some aspects not measured by the test scores and, conversely, test scores may be influenced by some facets of attainment and abilities not evident through the academic grades. Accordingly, a substantial but by no means perfect correlation between the two kinds of indicative measures would be expected.

RELATED LITERATURE

An intensive search for reports of research studies related to this project was conducted in the professional journals and publications in the North Carolina State Department of Public Instruction Professional Library, the North Carolina State Library, and the library of North Carolina State of the University of North Carolina at Raleigh.

Many studies based on analyses of State requirements for teachers' certificates or on college catalogues were discovered. Typical of these was the study on Professional Course Requirements for the Preparation of High School Teachers by Dr. Morris L. Cogan.

In the report on this study, presented to the 1958 Bowling Green Conference of the National Commission on Teacher Education and Professional Standards, Dr. Cogan pointed out that the study was based on the states' quantitative requirements.

Two studies that related closely to the project were found. One of these was Mr. Charles H. Little's 1959 study of some quantitative aspects of the college curricula for prospective teachers in North Carolina. The report of that study, published by the North Carolina Board of Higher Education and entitled A Profile of Teacher Training, contained an analysis of 2,155 transcripts of in-State college graduates who had applied for teacher certification.

Little's study differentiated all college courses into the areas of art, education, English, foreign language, health and physical education, mathematics, music, science, social studies, and other subjects. He also separated the transcripts according to the area of certification. Illustrative of the report was his "Curriculum for 425 Primary Teachers." This report showed the following:

Subject Areas	Semester Hours
Education	34.1
Health and Physical Education	12.6
English	19.6
Social Studies	29.1
Foreign Language	5.5
Mathematics	3.3
Science	9.3
Art	5.1
Music	5.8
Other Subjects	7.3
Total	131.7

The other related study was conducted by Barbara Pitcher of the Statistical Analysis Division of the Educational Testing Service on The Relation of Academic Success for Teacher Preparatory Curricula to Scores on the National Teacher Examination Common Examination. The objective of that study was to investigate the relation between scores on the National Teacher Examination's Common Examinations Battery and cumulative grade point averages obtained over four years of preparation for teaching. The investigator used data from 11 colleges and universities.

Miss Pitcher found that the average correlation of weighted common examinations scores with cumulative grade point averages was .57, which represented a reasonably high relation between the two variables.

The results of that study indicated that grade point averages and Common Examination test scores do have a rather high relationship. However, the relation between test scores and grades was low enough to suggest that each may have a unique contribution to make.

RESULTS

Results are discussed under four major headings, related to the questions posed in the introduction to this report. The first section deals with the basic curricular pattern of 1962 and 1963 teacher education graduates of North Carolina institutions of higher education. An analysis of the differences in curricular patterns of teacher education students according to the level or area for which the student was prepared to teach is presented in the second section. The third section deals with the statistical relationships between collegiate grades, expressed as grade point averages, and scores attained on the Common Examination of the National Teacher Examination. Data concerning minimum and maximum semester hours in secondary school areas of certification and in education are presented in the fourth section.

Basic Curricular Patterns. Table 2 presents the basic curricular patterns found in this study and reveals that the average program contained a total of 129.3 semester hours differentiated as outlined under "over-all average." It should be noted that this "over-all average" was compiled from persons certificated in all areas of the elementary and secondary school. It is not implied that any single person had a transcript exactly like this compilation.

Several interesting points were discovered from the "over-all average." For example, prospective teachers tend to take large numbers of courses in health and physical education (10.6 s.h.) and history (12.1 s.h.). The average also shows that few students have taken work in education courses related to the use of audio-visual media (.3 s.h.), courses in philosophy (1.0 s.h.), or courses in English grammar (1.6 s.h.).

Analysis of Differences in Curricula Patterns. The diversity of curricular patterns according to area of certification is presented also in Table 2. The tremendous number of comparison subanalyses precludes comprehensive explanation within the

TABLE 2

CURRICULA OF 2374 TEACHER EDUCATION GRADUATES FROM NORTH CAROLINA INSTITUTIONS

Subject Matter Areas	Areas of Certification							
	Over All Average	Primary	Grammar	Art	Bible	Commerce	English	Foreign Language (Modern)
History and Phil. of Ed.	4.8	4.8	5.8	5.1	4.0	4.7	4.6	4.8
Ed. Psych. Found.	6.3	6.5	6.9	5.6	6.0	6.2	5.9	5.6
Methods	5.6	9.4	9.3	2.6	.3	3.2	3.2	3.1
A-V Related	.3	.4	.6	.1		.2	.2	.4
Practicum	7.3	8.0	8.0	7.0	5.0	6.8	7.5	7.2
Art	4.0	6.5	6.3	39.5	4.7	1.3	1.6	1.8
Commerce	3.2	.7	.4	3.8		39.7	.8	.4
Grammar	1.6	2.0	2.2	.7		1.5	3.0	.7
Literature	9.0	8.0	8.4	6.2	6.0	5.5	24.0	8.7
Composition	6.0	6.1	6.0	5.9	6.0	5.4	7.7	5.8
Speech	2.2	2.3	2.0	1.1	1.0	1.9	3.9	1.6
French	3.8	2.5	2.3	4.6		1.7	7.3	22.5
German	.7	.2	.4			.4	1.0	1.5
Spanish	2.6	2.4	1.7	2.8	6.0	1.6	3.3	14.8
Other Language	.5	.3	.4	.6		.2	1.2	2.1
Vocational	3.2	1.0	.8	2.4	1.0	.1	.2	.4
Health and Phy. Ed.	10.6	11.2	11.4	5.1	4.3	5.6	5.4	5.2
Mathematics	6.2	4.5	4.9	3.9	6.0	8.9	4.8	4.3
Music	5.4	6.9	7.2	1.3	8.7	1.4	2.1	1.8
Philosophy	1.0	.8	.8	.4	4.0	.5	1.5	1.4
Psychology	3.2	3.2	3.2	2.2	8.0	2.6	3.4	3.6
Biology	6.9	5.6	5.7	5.1	5.3	4.8	5.5	5.4
Chemistry	2.1	.5	.6	1.1	2.7	.3	1.4	1.9
Physics	1.0	.2	.2	.4		.1	.5	.5
Other Science	2.1	3.0	3.0	1.8	2.0	1.5	1.6	1.3
Economics	2.0	.9	1.0	.8	1.0	8.5	1.3	1.1
Geography	4.0	6.7	6.9	2.2	2.0	1.5	1.8	1.9
History	12.1	12.0	12.6	9.3	12.3	8.0	12.1	10.7
Sociology	3.3	3.0	3.1	2.9	2.0	1.1	3.0	2.9
Other Social Studies	3.4	3.9	4.0	2.8	4.0	1.6	2.8	2.4
Other Courses	4.9	5.0	4.5	4.4	31.3	2.9	6.3	4.9
Total Semester Hours	129.3	128.5	130.6	131.7	133.6	129.7	128.9	130.7
Number of Cases	2374	428	492	37	3	152	286	69

TABLE 2 (Continued)

Subject Matter Areas	Areas of Certification									
	Health and Physical Education	Health Education	Home Economics	Industrial Arts	Latin	Mathematics	Music	Science	Social Studies	Library Science
Histcry and Phil. of Ed.	5.0	4.5	4.6	3.8	4.8	4.7	4.8	4.8	4.5	4.4
Ed. Psych. Found.	6.1	8.0	6.0	6.3	6.0	6.2	6.0	6.2	6.1	5.8
Methods	3.5	2:0	3.1	2.9	3.6	3.3	3.3	.6	3.2	5.5
A-V Related	.2		.6	.3	1.8	.2	.3	.3	.4	1.1
Practicum	6.9	3.0	6.8	8.3	4.2	7.0	6.4	7.2	6.5	6.7
Art	1.2	3.0	3.8	2.8	.4	.9	2.1	.8	1.2	1.2
Commerce	.6		.3	.3		.5	.3	.8	1.5	3.1
Grammar	.9	1.5	.6	.5	.2	1.1	.6	1.2	1.0	1.5
Literature	5.5	4.0	5.7	4.2	11.0	5.8	4.8	4.1	7.1	10.3
Composition	5.4	6.0	6.1	6.2	5.0	5.6	5.6	5.4	5.7	5.2
Speech	1.8		1.7	2.2	.8	1.5	2.5	2.4	2.0	2.3
French	1.5	6.0	3.4			7.1	4.1	2.5	4.6	6.2
German	.2		.2		4.8	1.5	2.9	2.4	.9	1.8
Spanish	2.7		2.0	.2	6.6	2.1	.9	.7	3.3	2.3
Other Language	.4		.1		23.8	.2	.3	.2	.8	
Vocational	.4		37.8	48.0		2.6	.1	.6	.3	
Health and Phy. Ed.	40.4	42.5	5.4	7.5	3.8	6.9	4.0	6.4	6.3	6.0
Mathematics	4.9	7.0	2.6	6.2	3.0	31.8	4.2	9.0	4.5	4.8
Music	1.2	1.5	1.9	1.8		1.7	61.7	1.0	1.7	2.2
Philosophy	.9	3.0	.3	.3	1.8	1.3	1.8	.5	1.7	.2
Psychology	2.8	5.0	2.9	2.6	1.8	3.1	2.4	2.8	4.3	3.1
Biology	11.4	13.0	7.8	2.3	8.0	5.3	1.7	19.8	6.0	9.4
Chemistry	1.5	3.0	7.8	2.2		5.7	.7	12.8	1.3	1.8
Physics	.1		2.6	4.6		6.8	.2	8.2	.3	
Other Science	1.4	1.5	1.1	1.0		1.0	1.9	5.5	1.2	.5
Economics	1.5	7.5	1.1	1.2	.6	2.6	.6	.6	5.0	1.5
Geography	2.6		1.3	3.4	.4	2.0	1.1	4.2	4.0	3.0
History	11.0	13.5	7.0	8.1	18.2	8.9	6.6	9.0	22.9	12.1
Sociology	3.0	4.0	3.7	.7	7.8	2.3	2.2	1.5	8.8	4.6
Other Social Studies	2.7		1.2	1.9	3.0	2.7	1.2	2.8	7.1	2.6
Other Courses	3.6	5.5	3.0	4.0	7.8	5.0	4.6	3.5	6.0	25.7
Total Semester Hours	131.5	145.0	132.5	133.8	129.2	137.4	139.9	127.8	130.2	134.9
Number of Cases	176	2	94	33	5	99	66	78	236	13

TABLE 2 (Continued)

Subject Matter Areas	Areas of Certification							
	Special Education	Vocational (Agriculture)	Biology	Chemistry	General Science	History	Sociology	Basic Business
History and Phil. of Ed.	5.4	2.4	4.7	7.5	6.0	4.6	6.0	3.0
Ed. Psych. Found.	12.8	5.8	6.4	3.0	5.1	5.2	4.5	6.0
Methods	5.8	6.5	3.2	4.0	4.0	3.1	3.0	2.8
A-V Related	.6	.4	.6		.9	.4	1.5	
Practicum	6.2	6.0	6.3	6.5	5.8	5.3	6.0	6.5
Art	4.2	.6	1.2	1.5	.2	1.0	3.0	1.8
Commerce		.5	.3	3.0		.6		34.5
Grammar	1.2	.6	.8		1.0	.6		
Literature	9.0	1.2	7.0	6.0	6.9	8.6	6.0	6.0
Composition	4.8	6.0	5.0	4.5	3.8	5.8	9.0	6.2
Speech	16.8	4.2	1.7		2.5	1.2	4.0	2.8
French	8.4		3.7		4.9	5.0	6.0	1.5
German			2.4	8.5		2.8		3.0
Spanish	4.2	.7	2.2		1.5	3.6		3.0
Other Language			.1		.5	1.6		
Vocational	.4	47.9	1.0		3.5	.5		.8
Health and Phy. Ed.	4.4	5.5	14.1	2.0	4.1	11.6	2.5	3.5
Mathematics	.8	5.0	6.0	17.0	19.9	5.1	6.5	3.8
Music	1.2	1.2	1.6	1.5	.2	2.2	1.0	1.0
Philosophy	1.0	1.9	1.2	1.5	.8	2.2	3.0	4.5
Psychology	7.8	1.4	3.0	4.5	3.2	4.3	10.5	3.0
Biology	6.6	8.4	26.8	14.0	20.5	5.7	3.0	1.8
Chemistry	2.8	6.0	8.5	38.5	11.2	5.6	4.0	
Physics		1.4	1.2	8.0	6.8	.5	6.0	
Other Science		1.4	1.9	1.5	4.5	1.5		.8
Economics	.6	3.4	.7	1.5	1.1	1.2		13.8
Geography	1.2	.5	2.0		2.5	1.3	1.5	4.5
History	6.6	5.0	10.0	1.5	6.8	26.0	9.0	11.5
Sociology	1.8	3.2	3.0	4.5	2.6	.6	28.5	2.2
Other Social Studies	.6	4.4	1.8	6.0	1.1	2.3		4.5
Other Courses	7.8	7.2	5.5	3.0	6.5	9.5	9.0	.8
Total Semester Hours	123.0	138.7	133.9	149.5	138.4	12[illegible]	[illegible]5	133.6
Number of Cases	5	17	52	2	8	15	2	4

confines of this report. However, it should be pointed out that the amount of subject matter work in each area of certification is far in excess of the minimum required by the State; e.g., the State requires 30 semester hours in English, but this report shows that persons certificated in English had a total of 38.6 semester hours in English, broken down into 3.0 s.h. in English grammar, 24.0 s.h. in English and American literature, 7.7 s.h. in composition, and 3.9 s.h. in speech.

Coefficient of Correlation Between NTE Test Scores and Grade Point Averages. The term "correlation" refers to the degree of correspondence or relationship between two sets of variable measures. The degree of relationship is expressed by the coefficient of correlation (r) on a scale extending from 1.00 to -1.00. An r of 1.00 would denote perfect relationship. An r of .00 implies no true relationship but rather occurrence of the variables as might be expected to happen if they were not related in any way. A perfect inverse relationship would be indicated by an r of -1.00. Between 1.00 through .00 to -1.00 different degrees of correspondence are expressed by such r's (in decimal form) as .60, -.30, .20, etc.

In this project, the sets of variable measures were 2,310 scores on the Weighted Common Examination of the National Teacher Examination and the over-all academic grade point averages of the persons attaining the scores.

A perfect relationship r of 1.00 would have meant that every person who had a relatively high grade point average scored relatively high on the NTE and that every person with a relatively low grade point average scored relatively low on the NTE. A perfect inverse r of -1.00 would have meant that every person with a relatively high grade point average scored relatively low on the NTE and every person with a relatively low grade point average scored relatively high on the NTE.

Table 3 presents the results of the Regression Analysis Program on an IBM 1401 computer with the original variable data of this project.

TABLE 3

CORRELATIONAL RESULT3 BY REGRESSION ANALYSIS

	NTE	GPA
Means of Variables	543.117	1.588
Standard Deviations of Variables	1.285	.501
Coefficient of Correlation (r)	.635	

These data show that the mean of the project sample on the Weighted Common Examination of the National Teacher Examination was 543.117. This compares closely with the State-wide mean of this examination of 541 as reported in the Statistical Summary of the North Carolina Statewide Administrations of the National Teacher Examinations by the Educational Testing Service.

The mean of 1.588 on the grade point averages indicates that the average person prepared to be a teacher has an academic grade point average of slightly more than "C+" (a perfect "C+" would have been 1.50) on the basis on which these averages were computed.

The data on standard deviations reveals that approximately two-thirds of the persons in the project attained NTE scores between plus and minus one standard deviation of the mean. This would place this two-thirds group between the range of 671 and 415 on the NTE. The standard deviations on grade point averages would place two-thirds of the persons between grade point averages of 2.08 and 1.08.

The coefficient of correlation of .635 represents a reasonably high relation between the Weighted Common Examinations score and grade point averages. This supports the view that the National Teacher Examination Common Examinations do measure what they are intended to measure as noted in the section of this report entitled Rationale for Use of National Teacher Examination Scores and that there is a definite positive relationship between test scores and grade point averages.

Minimum and Maximum Semester Hours in Secondary School Areas of Certification and in Education. Table 4 presents data on the variations in amount of work taken in the area in which certified and in education. The State minimum requirements for certification are noted. Each person certified in each particular area met the minimum requirement.

The areas showing the most extreme maximums were art (79 s.h.), music (99 s.h.), science (70 s.h.), and social studies (65 s.h.). It should also be noted that the maximums in several other areas were more than twice as large as the amount required for certification in that area; e.g., Bible, commerce, health and physical education, and mathematics.

The data on minimum and maximum hours taken in education reveal that the largest maximums were in the areas of primary and grammar grade certification (51 and 52 s.h.) and that the maximum number of semester hours taken in education by any person certificated in a secondary school area was 36.

TABLE 4

VARIATIONS IN AMOUNT OF WORK TAKEN IN AREAS OF CERTIFICATION AND IN EDUCATION

Secondary School Certification Area	Minimum Requirements in Major Subject(s)	Minimum Hours Taken	Maximum Hours Taken
Art	30	30	79
Bible	21	22	45
Commerce (Business Subjects)	24	24	64
English (Lit., Comp., Gram., Spch.)	30	30	57
Foreign Languages (French, German, Spanish)	24	24	42
Health and Physical Education	24	24	57
Home Economics (Vocational)	27	27	54
Industrial Arts	30	38	63
Latin	24	26	35
Mathematics	18	18	49
Music	36	43	99
Science	30	30	70
Social Studies	30	30	65
Education			
Primary	18	18	51
Grammar	18	18	52
Secondary	18	18	36

SUMMARY AND CONCLUSIONS

Curricula Summary. The results of this phase of the project reinforced the concept that prospective teachers' curricula differ greatly according to the level or area for which certificated and that prospective secondary school teachers tend to take more work in their area of specialization than is required by the State. The wide range of results in each area also indicate that prospective teachers are taking many academic courses other than education and their area of specialization.

Correlation Summary. The project's derived coefficient of correlation of .635 represents a high relationship between the grade point averages and scores on the Common Examination of the National Teacher Examination. This supports the viewpoint that the examinations measure what they are intended to measure and that scores attained by individuals on the examinations are highly likely to be in close relation to the grades achieved during their four years of collegiate preparation for teaching.

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